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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action

1. The proposed amendment has been entered since the addition of the limitations of dependent claim 3 to parent claim 1 does not present any new issues. However, it fails to place the application in condition for allowance for the reasons set forth below.

2. Applicant argues that Shibahara specifically discloses glass cloths are most preferred as the glass filler (b), and then discloses in the subsequent paragraph that the glass filler (b) is incorporated in an amount of preferably 30 to 70%, and [that as such,] Shibahara does not provide any reason whereby a skilled artisan could derive that selecting the glass cloth as a most preferred form of the glass filler when the amount of 30 to 70% by weight is applied to a different form of the glass filler as required by the rejection.

Applicant is respectfully apprised that Applicant's argument is not clear as to what is being objected to except for the fact that Applicant does not think that Shibahara can be applied to the presently amended claim 1. The rejection of claim 1 is reiterated below along with the rejection of the limitations of cancelled claim 3 that have been added to parent claim 1.

Rejection Repeated

Claim Rejections - 35 USC § 103

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibahara (US 7,132,154) in view of Border (US 2002/0123550 A1).

Shibahara teaches a resin sheet (plastic sheet substrate, column 10, lines 12-13), characterized in that it comprises a cured epoxy resin layer containing in an epoxy

resin ((a), column 7, lines 55-60) a glass fiber cloth-like material (glass filler (b), glass cloths most preferred, column 9, lines 1-8) and inorganic particles (composite composition may further contain another inorganic filler, column 9, lines 43-47, which are particles added to a matrix to improve its properties). Shibahara teaches that the refractive index difference between the epoxy resin that forms the cured resin layer and the glass fiber cloth-like material is more preferably not more than 0.005 (column 3, lines 20-25), which is within the claimed range of 0.01 or less. Shibahara teaches that the light transmittance of the resin sheet is 88% or more when measured at 550 nm (columns 13-14, lines 50-60), which is within the claimed range of 88% or more. Shibahara teaches that the resin sheet has excellent transparency (column 2, lines 10-15) wherein the inorganic filler particles do not impair transparency (column 9, lines 45-47), but fails to disclose the dimensions of the inorganic particles, and thus fails to teach a mean particle diameter within the range of 100 nm or smaller, or 70 nm or smaller.

However, Border teaches that an inorganic filler silica ([0006]) which is an inorganic oxide, with a mean particle diameter of 40 nm ([0035]), which is within the claimed range of 100 nm or smaller, is used for the purpose of avoiding the scattering of light and hence maintain the desired level of transparency ([0035]).

Therefore, since Shibahara is silent regarding the dimensions of the inorganic particles, it would have been necessary and hence obvious to have looked to the prior art for suitable ones. As such, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided silica inorganic oxide particles with a mean particle diameter within the range of 100 nm or smaller, or 70 nm or

smaller, as the inorganic particles in the resin sheet with excellent transparency of Shibahara, in order to avoid scattering of light and hence maintain the desired level of transparency, as taught by Border.

Thus, although Shibahara, as modified by Border, fails to disclose that the resin sheet is structured to have a haze value of 10% or lower, where the claimed and prior art products are identical or substantially identical in structure and composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, and the claimed properties are presumed to be inherent. See MPEP 2112.01. If there were to be any differences in structure or chemistry, these differences are presumed to be minor and obvious in the absence evidence to the contrary. In the instant case, Shibahara, as modified by Border, teaches the presently claimed composition, as described above. Shibahara teaches that the resin sheet has improved smoothness (column 10, lines 12-15) and excellent transparency (column 2, lines 10-15) wherein the transparency is not impaired by the components of the resin sheet (column 9, lines 45-48). Furthermore, Shibahara teaches that the diffused refraction of light passing through the resin is undesirable (column 1, lines 55-58) which means that haze is undesirable.

Shibahara, as modified by Border, fails to teach the amount of inorganic particles.

However, Shibahara teaches that while the glass fiber cloth-like material is a most preferred form of the glass filler (b), Shibahara teaches that glass particles can also be a part of the glass filler (glass beads, glass flakes, glass powders, column 9,

lines 1-8) and that the resin layer can further comprise another inorganic filler (column 9, lines 43-49). Thus the glass filler (b) of Shibahara can comprise inorganic glass particles such as silica in addition to the glass fiber cloth-like material that is the most preferred. Shibahara teaches that the glass filler (b) as a whole is incorporated more preferably in an amount of 30 to 70% by weight, for the purpose of reducing the linear expansion coefficient of the resin sheet (composite formulation, column 9, lines 15-20), thus establishing the amount of glass filler (b) which includes inorganic glass particles along with the glass fiber cloth-like material that is the most preferred, as a result-effective variable that is varied for the purpose of reducing the linear expansion coefficient of the resin sheet.

Therefore, in the absence of a showing of criticality, it would have been routine experimentation for one of ordinary skill in the art at the time the invention was made, to have added inorganic glass particles to the resin layer, in an amount that is within the range of 15 to 60 weight %, to fill the portions of the resin layer that are not occupied by the glass fiber cloth-like material in the composite resin sheet of Shibahara, in order to further reduce the linear expansion coefficient of the resin sheet taught by Shibahara.

4. Applicant argues that Shibahara does not provide any reason whereby a skilled artisan could derive that selecting the glass cloth as a most preferred form of the filler.

Applicant is respectfully apprised that this is indeed what is taught by Shibahara (column 9, lines 5-8).

5. Applicant argues that Shibahara only teaches a small amount of a second filler as a load material (column 9, lines 43-47).

Applicant is respectfully apprised that Applicant's lower limit of 15 weight % is considered relatively small. Furthermore, Shibahara teaches that while the glass fiber cloth-like material is a most preferred form of the glass filler (b), Shibahara teaches that glass particles can also be a part of the glass filler (glass beads, glass flakes, glass powders, column 9, lines 1-8) and that the resin layer can further comprise another inorganic filler (column 9, lines 43-49). Thus the glass filler (b) of Shibahara can comprise inorganic glass particles such as silica in addition to the glass fiber cloth-like material that is the most preferred. Shibahara teaches that the glass filler (b) as a whole is incorporated more preferably in an amount of 30 to 70% by weight, for the purpose of reducing the linear expansion coefficient of the resin sheet (composite formulation, column 9, lines 15-20), thus establishing the amount of glass filler (b) which includes inorganic glass particles along with the glass fiber cloth-like material that is the most preferred, as a result-effective variable that is varied for the same purpose of reducing the linear expansion coefficient of the resin sheet.

6. Applicant's arguments against the secondary references of Border and Babb are directed toward Shibahara, and are addressed above.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks, can be reached on (571)272-1401. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

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/Sophie Hon/

Sow-Fun Hon

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1794